

### Wildfowl Ecology Symposium

## The feeding behaviour and food of the Shelduck on the Ythan Estuary, Aberdeenshire

N. BUXTON

In a study carried out from 1971–1974 the main food of adult Shelduck *Tadorna tadorna* was the mollusc *Hydrobia ulvae*, but the shrimp *Corophium volutator* and bristle worm *Nereis diversicolor* were also important, especially to ducklings.

Winter flocks of ducks showed a pronounced tidal feeding rhythm with most feeding carried out on the ebbing and flowing tide. Feeding ceased over high water on spring tides but on neap tides high water was a period of intensive feeding. Night feeding also occurred. Females feed for longer than males.

Time spent feeding was inversely correlated with *Hydrobia* density and biomass. These relationships also held in spring when the stage of the breeding cycle of the ducks could be identified by the diurnal pattern of attendance on the territory. Various parameters of territory, i.e. territory size, particle size, water content, and water coverage, were measured and related to feeding.

The diurnal rhythm of feeding by broods and parents was investigated together with the relationships with the prey.

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## Survival and causes of mortality in Eider ducklings on the Ythan Estuary, Aberdeenshire

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The fledging success of the Common Eiders *Somateria mollissima* on the Ythan Estuary was studied during the summers of 1972 to 1974. 3,500 to 4,500 ducklings were hatched each year, but less than 10% survived.

The principal cause of mortality was predation by large gulls, mainly Herring Gulls *Larus argentatus*. It was estimated that these took 80% of the ducklings between hatching and the age of two weeks. Parasites were a secondary cause of mortality; almost all ducklings examined were found to be infected by renal coccidiosis *Eimeria somateriae*, but only 8% were estimated to have suffered potentially lethal damage. Food shortage seems unlikely to cause many deaths, but some ducklings may fail to obtain enough

food during bad weather, when the time they spent feeding increased.

Bad weather (a combination of wind, cold and rain) caused some direct mortality in very young ducklings. It also interacted with other factors: predation was found to increase in bad weather, and mortality from parasites may also have done. Interactions were demonstrated between predation and both parasite infection and feeding behaviour. Duckling mortality could best be explained through the interaction of several of these factors.

Rates of growth of tagged ducklings in the field were variable. Laboratory rearing and field collections suggest that food, parasites, or both, may have caused the variations.

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